PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

March 25, 2008

Applicants: Uwe HOFMANN et al

For: LEAD-FREE COPPER ALLOY AND A METHOD OF MANUFACTURE

Serial No.: 10/786 470 Group: 1793

Confirmation No.: 9330

Filed: February 25, 2004 Examiner: Ip

Atty. Docket No.: 5200.P0062US

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

LETTER TRANSMITTING APPEAL BRIEF FEE

Sir:

Enclosed is Appellants' check in the sum of $510.00 representing payment of the Appeal Brief fee. The Commissioner is hereby authorized to charge any additional fee which may be required by this paper, or to credit any overpayment, to Deposit Account No. 06-1382. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

IN DUPLICATE
TFC/smd

Terryence F. Chapman

FLYNN, THIEL, BOUTELL & TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1631
Phone: (269) 381-1156
Fax: (269) 381-5465

David G. Boutell Reg. No. 25 072
Terryence F. Chapman Reg. No. 32 549
Mark L. Maki Reg. No. 36 589
Liane L. Churney Reg. No. 40 694
John A. Waters Reg. No. 24 802
Brian R. Tumm Reg. No. 36 328
Donald J. Wallace Reg. No. 43 977
Stephen C. Holwerda Reg. No. 57 391
Dale H. Thiel Reg. No. 24 323
Sidney B. Williams, Jr. Reg. No. 24 949
Heon Jekal Reg. No. L0379*
*limited recognition number

Encl: Appellants' Brief on Appeal
including Appendixes
Check ($510.00)
Postal Card

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on March 25, 2008.

Terryence F. Chapman

PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

March 25, 2008

Applicants: Uwe HOFMANN et al

For: LEAD-FREE COPPER ALLOY AND A METHOD OF MANUFACTURE

Serial No.: 10/786 470 Group: 1793

Confirmation No.: 9330

Filed: February 25, 2004 Examiner: Ip

Atty. Docket No.: 5200.P0062US

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' BRIEF ON APPEAL

Sir:

This is an appeal from the decision of the Examiner dated November 1, 2007, finally rejecting Claims 19-24.

REAL PARTY IN INTEREST

Wieland-Werke AG is the assignee of the present application and the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences to the present application.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on March 25, 2008.

Terryence F. Chapman

STATUS OF CLAIMS

Claims 1-6 have been canceled. Claims 7-18 are pending but have been withdrawn from consideration. Claims 19-24 are pending and are the claims for consideration on appeal.

STATUS OF AMENDMENTS

No amendment has been filed subsequent to the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention, as defined by independent Claim 19, is directed to a copper alloy consisting of, in weight percent; 60-70% copper, 1.5-2.5% tin, 0.01-0.5% iron and/or cobalt, 0.01-0.5% nickel, 0.01-0.5% manganese and/or silicon, up to 3% magnesium, up to 0.2% phosphorus, each of silver, aluminum, arsenic, antimony, titanium and zirconium in an amount up to 0.5% and the remainder being zinc and unavoidable impurities (abstract and paragraph [0036] in the "clean" copy of the specification).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants respectfully request review of Claims 19-24 under 35 USC 103(a) as being unpatentable over JP 2002-038246 (JP '246).

ARGUMENT

The presently claimed invention is directed to a copper, tin and zinc-based alloy which has a good machining property, a good workability, a high corrosion resistance, an increased strength level, a high ductility comparable to lead-containing machinable brass, a capability for mass production in a mill for partially finished products and is further distinguished by not containing any toxic elements.

The alloys of the present invention are particularly suitable for use in the fields of electrical engineering as contact materials such as clamping joints and plug connectors,

other fastening elements and as components or containers for the transport or the storage of liquids. These alloys can be recycled without presenting ecological or toxic problems with respect to their use and disposal.

In order for the presently claimed alloys to have the properties discussed above, it is essential that they consist of, in weight percent, 60-70% copper, 1.5-2.5% tin, 0.01-0.5% iron and/or cobalt, 0.01-0.5% nickel, 0.01-0.5% manganese and/or silicon, up to 3% magnesium, up to 0.2% phosphorus, each of silver, aluminum, arsenic, antimony, titanium and zirconium in an amount of up to 0.5% and the remainder being zinc and unavoidable impurities. It is respectfully submitted that the currently claimed invention is patentably distinguishable over the prior art cited by the Examiner.

REJECTION OF CLAIMS 19-24 UNDER 35 USC 103(a) AS BEING UNPATENTABLE OVER JP '246

JP '246 discloses copper alloys which are suitable for electric lines or cable material and electric contacts. The copper alloy disclosed in this reference can contain from 0-10 wt.% tin, 0-40 wt.% zinc, 0-10 wt.% nickel, 0-3 wt.% iron, 0-1 wt.% chromium, 0-1 wt.% manganese, 0-0.5 wt.% phosphorus, 0-1 wt.% silicon, 0-1 wt.% magnesium, 0-0.5 wt.% zirconium, 0-1 wt.% titanium, 0-1 wt.% cobalt, 0-1 wt.% silver, 0-5 wt.% aluminum, 0-0.5 wt.% boron and/or rare earth elements in an amount of from 0-0.5 wt.%. However, there is no disclosure in this reference of a specific alloy composition which falls within the scope of the present claims or even presents a showing of prima facie obviousness with respect to the claims under consideration on appeal.

It has been well settled that to establish prima facie obviousness, the prior art must compel a conclusion of obviousness, absent evidence or argument to rebut it. *In re Spada*, 911 F.2d 705 (Fed. Cir. 1990). Moreover, not only must the prior art be "close" to the claimed subject matter in order to establish prima facie obviousness, but also the prior

art must suggest making the claimed invention. The prior art must provide the motivation to make the claimed invention. *In re Baird,* 16 F.3d 380 (Fed. Cir. 1994).

In the particular situation, the disclosed range of JP '246 is so broad as to encompass a very large number of possible distinct compositions as the only metal specifically required is copper and the specific alloys disclosed in JP '246 are outside of the scope of the present claims and do not even present a showing of prima facie obviousness under 35 USC 103(a). The closest alloy specifically disclosed in this reference to that of the present invention is the alloy designated as "A" in Drawing 4, which contains 2.5% nickel, 0.6% silicon, 0.5% zinc, 0.2% tin, 0.1% magnesium and the balance being copper. The 2.5% nickel content is much greater than the upper limit of 0.5%, the 0.2% tin content is much lower than the claimed lower limit of 1.5 wt.% and the zinc content of 0.2% is much lower than the minimum 20% required in the present claims.

Although there have been rulings that a generic disclosure can present a showing of prima facie obviousness under 35 USC 103(a) with respect to a narrower disclosure, the Courts have also found that an overly broad generic disclosure does not present a showing of prima facie obviousness to much narrower ranges, particularly when the broad disclosure indicates a preference teaching away from the claimed compounds (*In re Baird,* 16 F.3d 380). As the Courts have readily held, an invention that significantly narrows a broad range and, as a result, teaches an invention that one skilled in the art would not have discovered based on the prior art, can be non-obvious. Appellants respectfully submit that the currently presented claims would not have been arrived at given the disclosure of JP '246 and, as such, a showing of prima facie obviousness with respect to the presently presented claims have not been made.

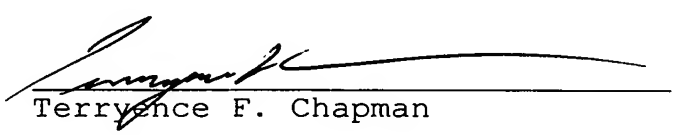
Appellants also respectfully submit that sufficient objective evidence of unobviousness of the presently claimed

invention is present in its own specification that is more than adequate to rebut a proper 35 USC 103(a) prima facie obviousness rejection. In Figure 1 in the present specification, the relationship between the standard deviation of the product characteristics and the content of matrix-active elements without the majority components of copper, zinc and tin is shown. The curve in the graph illustrates the to be expected trend for the standard deviation without consideration of further effects. As shown in Figure 1, with respect to the content of the matrix-active elements, the dispersion of the technological characteristics decrease asymtopically over a certain range which leads to the conclusion that as high as possible of the matrix-active elements should be supplied. However, practice shows that the desired material characteristics occur only up to a total content of the matrix active elements of 5% as a maximum. Above 5%, no further improvement in the dispersion can be observed since considerable unpredictable superposed additive effects are observed, which should not lead to any further improvement. The material characteristics are the apparent yielding point, the tensile strength, the ductile yield, the hardness, the grain size and the hardening ability of the material. Therefore, Appellants respectfully submit that the patentability of the presently claimed invention over JP '246 has been established.

CONCLUSION

Reversal of the Examiner's rejection of Claims 19-24 is respectfully solicited.

Respectfully submitted,



Terrence F. Chapman

TFC/smd

FLYNN, THIEL, BOUTELL
& TANIS, P.C.
2026 Rambling Road
Kalamazoo, MI 49008-1631
Phone: (269) 381-1156
Fax: (269) 381-5465

David G. Boutell Reg. No. 25 072
Terryence F. Chapman Reg. No. 32 549
Mark L. Maki Reg. No. 36 589
Liane L. Churney Reg. No. 40 694
John A. Waters Reg. No. 24 802
Brian R. Tumm Reg. No. 36 328
Donald J. Wallace Reg. No. 43 977
Stephen C. Holwerda Reg. No. 57 391
Dale H. Thiel Reg. No. 24 323
Sidney B. Williams, Jr. Reg. No. 24 949
Heon Jekal Reg. No. L0379*
*limited recognition number

Encl: Claims Appendix
Evidence Appendix
Related Proceedings Appendix
Postal Card

110.10/07

CLAIMS APPENDIX

19. A copper alloy consisting of, in weight %: 60-70% Cu; 1.5-2.5% Sn; 0.01-0.5% Fe and/or Co; 0.01-0.5% Ni, 0.01-0.5% Mn and/or Si; up to 3% Mg; up to 0.2% P; each of Ag, Al, As, Sb, Ti and Zr in an amount up to 0.5% and the remainder being Zn and unavoidable impurities.

20. The copper alloy of Claim 19, wherein the total content of Fe, Co, Ni, Mn, Si, Mg, P, Ag, Al, As, Sb, Ti and Zr is 0.5-5%.

21. The copper alloy of Claim 19, wherein the total content of Fe, Co, Ni, Mn, Si, Mg, P, Ag, Al, As, Sb, Ti and Zr is 0.7-1%.

22. The copper alloy of Claim 19, wherein the alloy contains 0.07-3% Mg and 0.03-0.1% P.

23. The copper alloy of Claim 19, wherein the alloy contains 2.0-2.5% Sn, 0.07-3% Mg and 0.03-0.1% P.

24. The copper alloy of Claim 19, wherein the alloy contains 0.01-0.5% Mn.

EVIDENCE APPENDIX

There is no extrinsic evidence being relied on by the Appellants.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings to the present application.